UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/880,103	06/14/2001	Itzik Ben-Bassat	05193.00009	3821

22907 7590 11/15/2005

BANNER & WITCOFF
1001 G STREET N W
SUITE 1100
WASHINGTON, DC 20001

EXAMINER	
HUYNH, SON P	
ART UNIT	**PAPER NUMBER**
2611	

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/880,103	BEN-BASSAT ET AL.	
	Examiner	Art Unit	
	Son P. Huynh	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11,13-26,31 and 34-41* is/are pending in the application.

4a) Of the above claim(s) *1-11* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-26,31 and 34-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 13—26, 31, 34-41 have been considered but are moot in view of the new ground(s) of rejection.

Claims 12, 27-30, 32-33 have been canceled.

Claims 1-11 have been withdrawn.

Claim Objections

2. Claims 35 and 41are objected to because of the following informalities:

In claim 35, lines 2, the phrase "the transmitting section and receiving sections" should be replaced as- a transmitting section and receiving section.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 25, 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 25, lines 1-2, the phrase "the signals" is unclear since independent claim 15 claims radio frequency signal transmitted by transmitter card and radio frequency signal received by receiver card.

In claim 37, line 2, the phrase "the signal" is unclear since independent 34 recites "transmitting a radio frequency from the single transceiver card" and "receiving radio frequency signal transmitted to the single transceiver card".

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 34-35, 37-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Carhart (US 6,622,304).

Regarding claim 34, Carhart discloses a method for transmitting and receiving signals between a satellite and a personal computer (figures 5-7, col. 5, lines 15-20), the method comprising:

coupling a single transceiver card to an industry standard bus in the computer (coupling interface card 26 to a computer using USB – col. 11, lines 1-32; col. 12, lines 13-20, figures 2, 5);

transmitting a radio frequency signal from the single transceiver card responsive to data from the bus (transmitting the signal (i.e. signal in frequency band f_2 or signal below frequency band f_1) from the interface card 26 responsive to data from the bus – figure 7, col. 9, lines 60-61; col. 11, lines 1-32; col. 12, lines 15-56);

receiving radio frequency signal (i.e., signals in frequency bands f1 and f3) transmitted to the single transceiver card (26) and converting the received radio frequency signals to data (i.e., digital data) for transfer to the bus (figure 7, col. 11, lines 33-58; col. 12, line 57-col. 13, line 43).

Regarding claim 35, Carhart further discloses coupling transmitting section (i.e. 72, 701,702) and receiving section (75-79, 706) together directly via an auxiliary bus separate from the industrial standard bus (i.e. bus connected between the card and the computing device 21 – figure 7, col. 12, lines 35-56).

Regarding claim 37, Carhart further discloses determining a frequency band (i.e. f_1 or f_2 or f_3) of the signal using the data conveyed to the card (col. 11, lines 1-58; col. 12, lines 45-56).

Regarding claim 38, Carhart further discloses modulating the signal in accordance with a modulation scheme (e.g., NTSC, PAL, HDTV, etc.) determined responsive to a command conveyed via the bus (command from computing unit 21 – figures 5-9, col. 11, lines 1-32, col. 12, lines 15-56).

7. Claims 34, 36 and 40 are rejected under 35 U.S.C. 102(e) as being anticipated by Ollikainen et al. (US 6,377,981).

Regarding claim 34, Ollikainen discloses a method for transmitting and receiving signals between a satellite and a personal computer (figure), the method comprising:

coupling a single transceiver card (i.e. LEO transceiver card or GEO transceiver card – figure) to an industry standard bus in the computer (35 - figure);

transmitting a radio frequency signal from the single transceiver card responsive to data from the bus (transmitting signal from GEO transceiver card or LEO transceiver card responsive to data from bus 32 – figure and col. 3, lines 20-65, col. 4, lines 25-58);

receiving radio frequency signal transmitted to the single transceiver card and converting the received radio frequency signals to data for transfer to the bus (receiving

radio frequency signal from external networks via satellite and converts the received signal to data for transfer to the computer via bus 32 – figure and col. 4, lines 1-57).

Regarding claim 36, Ollikainen further discloses the cyberstation may be set up in a convenient location and left continuously powered up and connected to its antenna 13, 14 (col. 4, line 63-col. 5, line 1). Inherently, the method comprising mounting a power connector on the card, and powering an antenna system (13-15) external to the card via the power connector.

Regarding claim 40, Ollikainen further discloses transmitting the radio frequency signal includes transmitting the radio frequency signal to the satellite (transmitting signal to transmitter 21a or transmitter of LEO transceiver for transmitting to the satellite- figure and col. 3, lines 45-65).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carhart (6,622,304) as applied to claim 34 above.

Regarding claim 39, Carhart discloses a method of transmitting and receiving signals as discussed in the rejection of claim 34. However, Carhart does not specifically disclose the encoding error correction onto the radio frequency signal in accordance with an encoding scheme. Official Notice is taken that encoding error correction onto the radio frequency signal in accordance with an encoding scheme is well known in the art. For example, encode error correction onto radio frequency signal so the error correction signal can be used to correct the signal at the receiving side. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carhart, Ollikainen and Seta in order to improve efficiency in data transmission.

10. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carhart (6,622,304) as applied to claim 35 above, and further in view of Seta (US 5,301,194).

Regarding claim 41, Carhart discloses a method as discussed in the rejection of claim 35. Carhart further discloses an auxiliary bus directly connecting the transmitter (72,701,702) and the receiver (75-79,706- figure 7). However, Carhart does not specifically disclose synchronizing signal is conveyed from the receiver and the transmitter via the auxiliary bus.

Seta discloses synchronizing signal is conveyed from the receiver (25,26) and the transmitter (22-23) via the auxiliary bus (receiver receives synchronizing signal, slot signal, etc. from the central office, processes and transmits the synchronizing signal, slot signal to the transmitter to control the transmitter to transmit the signal according to the synchronizing signal, slot number –figures 2-4; col. 6, line 57-col. 8, line 37; col. 9, lines 30-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carhart to use the teaching as taught by Seta in order to reduce packet collision thereby improve transmission efficiency (col. 2, lines 55-64).

11. Claims 13-14, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carhart (6,622,304), in view of Ollikainen et al. (US 6,377,981), and further in view of Fleming (US 6,073,188).

Regarding claim 13, Carhart discloses a transceiver card (external interface card 26 – col. 10, line 66-col. 11, line 8; col. 12, lines 13-18) for a personal computer (computing apparatus 21), the personal computer having a USB port (USB extension is used for communication path between the external interface device 26 and the computing apparatus 21 – col. 11, lines 1-8), the transceiver comprising:

a transmitter that resides in a box external to the computer and that transmits radio frequency signals responsive to data received from the personal computer via the USB port (component 50 or transmitter, which correspond to components 72, 701,702

in figure 7, that resides in external peripheral card 26, for transmitting upstream signal to external network responsive to data received from computing apparatus 21 via the USB port connected between computing apparatus 21 and external peripheral card 26 – figures 5-8; col. 9, lines 59-67; col. 11, lines 1-9; col. 12, line 14-56);

a receiver that resides in the external box and that receives radio frequency signals and converts the received signals to data for transfer to the personal computer via the USB port (component 58 or 52, which correspond to components 75-79, 703,704 in figure 7, that resides in external peripheral card (26) and that receives radio frequency signal (f1, f2) and converts the signals to data for transfer to the computing apparatus 21 via USB port connect to external card 26 – figures 5-8; col. 12, line 57-col. 13, line 44; col. 11, lines 1-9). Inherently, the transmitter and receiver includes respective interfaces so that the transmitter and the receiver can be interfaced with Universal Serial Bus to transmit and receive data from the computing apparatus 21. Carhart also discloses the external system is for satellite TV instead of CATV (col. 5, lines 15-20; col. 17, lines 22-23). Carhart does not specifically disclose the upstream and downstream components are cards and using a USB hub. However, Ollikainen discloses a satellite transceiver (GEO transceiver or LEO satellite transceiver) comprises transmitter card (GEO 21a or LEO transmitter in 27) that reside in a box (cyberstation 20) external to computer 35 and that transmits radio frequency signals responsive to data received from the personal computer 35; a receiver card (GEO receiver 21 or LEO receiver in LEO satellite transceiver) that resides in the box (cyberstation 20) external to a personal computer 35 and receives RF signal and

converts the received signal for transfer to the personal computer (Figure, col. 1, lines 57-65; col. 3, lines 24-65; col. 4, lines 47-50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carhart to use the teaching using the cards as taught by Ollikainen in order to allow the device to be upgraded, transferred, or removed easily. However, neither Carhart nor Ollikainen specifically discloses using USB hub.

Fleming discloses using USB hub (122) which couples USB port to USB interfaces (124) via a USB bus (126) (figure 1a, col. 4, lines 19-42). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carhart and Ollikainen to use the teaching as taught by Fleming in order to improve convenience for connecting different devices (col. 2, lines 32-51).

Regarding claim 14, Carhart further discloses an auxiliary bus directly connecting the transmitter card and the receiver card (auxiliary bus connecting directly the RAMDAC 72, processing 701, modulation 702 to devices 75-79, 706 – figure 7).

Regarding claim 25, Carhart discloses two way communications between an in home communications station and the distribution system (col. 8, lines 10-12). Carhart further discloses the distribution system is for satellite TV (col. 5, lines 16-19). Thus, the signals are transmitted to a satellite. Alternatively, Ollikainen also disclose the signals are transmitted to a satellite (Figure).

12. Claims 17, 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carhart (6,622,304), in view of Ollikainen et al. (US 6,377,981).

Regarding claim 17, Carhart discloses a transceiver card (external interface card 26 – col. 10, line 66-col. 11, line 8; col. 12, lines 13-18) for a personal computer (computing apparatus 21), the personal computer having a USB port (USB extension is used for communication path between the external interface device 26 and the computing apparatus 21 – col. 11, lines 1-8), the transceiver comprising:

a transmitter that resides in a box external to the computer and that transmits radio frequency signals responsive to data received from the personal computer via the USB port (component 50 or transmitter, which correspond to components 72, 701,702 in figure 7, that resides in external peripheral card 26, for transmitting upstream signal to external network responsive to data received from computing apparatus 21 via the USB port connected between computing apparatus 21 and external peripheral card 26 – figures 5-8; col. 9, lines 59-67; col. 11, lines 1-9; col. 12, line 14-56);

a receiver that resides in the external box and that receives radio frequency signals and converts the received signals to data for transfer to the personal computer via the USB port (component 58 or 52, which correspond to components 75-79, 703,704 in figure 7, that resides in external peripheral card (26) and that receives radio frequency signal (f1, f2) and converts the signals to data for transfer to the computing apparatus 21 via USB port connect to external card 26 – figures 5-8; col. 12, line 57-col. 13, line 44; col. 11, lines 1-9). Inherently, the transmitter and receiver includes

respective interfaces so that the transmitter and the receiver can be interfaced with Universal Serial Bus to transmit and receive data from the computing apparatus 21. Carhart also discloses the external system is for satellite TV instead of CATV (col. 5, lines 15-20; col. 17, lines 22-23). However, Carhart does not specifically disclose the upstream and downstream components are cards and an internal DC source residing in the box for supplying power to the transmitter and the receiver.

Ollikainen discloses a satellite transceiver (GEO transceiver or LEO satellite transceiver) comprises transmitter card (GEO 21a or LEO transmitter in 27) that reside in a box (cyberstation 20) external to computer 35 and that transmits radio frequency signals responsive to data received from the personal computer 35; a receiver card (GEO receiver 21 or LEO receiver in LEO satellite transceiver) that resides in the box (cyberstation 20) external to a personal computer 35 and receives RF signal and converts the received signal for transfer to the personal computer (Figure, col. 1, lines 57-65; col. 3, lines 24-65; col. 4, lines 47-50). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carhart to use the teaching using the cards as taught by Ollikainen in order to allow the device to be upgraded, transferred, or removed easily. Ollikainen further discloses the cyberstation can receive and store broadcast data continuously (24 hours per day, 7 days per week) without requiring the personal computers 35 that are to ultimately receive the data to be turned on (col. 1, line 65-col. 2, line 5; col. 4, lines 17-23, lines 66-67). Thus, the power source is used for supplying power to the transmitter card and the receiver card. However, neither Carhart nor Ollikainen specifically discloses an

internal DC source residing in the box. Official Notice is taken that using internal DC source residing in the box is well known in the art. For example, using DC power source such as battery receiver device. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carhart and Ollikainen to use the well-known technique of using DC source as taught in the art in order to reduce power lost on the transmission line and reduce the risks.

Regarding claim 19, Carhart discloses a transceiver card (external interface card 26 – col. 10, line 66-col. 11, line 8; col. 12, lines 13-18) for a personal computer (computing apparatus 21), the personal computer having a USB port (USB extension is used for communication path between the external interface device 26 and the computing apparatus 21 – col. 11, lines 1-8), the transceiver comprising:

a transmitter that resides in a box external to the computer and that transmits radio frequency signals responsive to data received from the personal computer via the USB port (component 50 or transmitter, which correspond to components 72, 701,702 in figure 7, that resides in external peripheral card 26, for transmitting upstream signal to external network responsive to data received from computing apparatus 21 via the USB port connected between computing apparatus 21 and external peripheral card 26 – figures 5-8; col. 9, lines 59-67; col. 11, lines 1-9; col. 12, line 14-56);

a receiver that resides in the external box and that receives radio frequency signals and converts the received signals to data for transfer to the personal computer via the USB port (component 58 or 52, which correspond to components 75-79,

703,704 in figure 7, that resides in external peripheral card (26) and that receives radio frequency signal (f1, f2) and converts the signals to data for transfer to the computing apparatus 21 via USB port connect to external card 26 – figures 5-8; col. 12, line 57-col. 13, line 44; col. 11, lines 1-9). Inherently, the transmitter and receiver includes respective interfaces so that the transmitter and the receiver can be interfaced with Universal Serial Bus to transmit and receive data from the computing apparatus 21. Carhart further discloses the processor 701 then processes the video signal, which subsequently gets modulated to a frequency band f2 by a modulator 702. The processor 701 may include precompensation of the video signal to account for an uneven passband (col. 12, lines 44-56, figure 7). It is obvious that the transmitter includes a frequency synthesizer for generating the radio frequency signal (i.e. in frequency band f_2), wherein the frequency generated by the frequency synthesizer is set by a controller (i.e. controller 705 or processor 701 or modulator 702) on the transmitter to improve efficiency in data transmission. Carhart also discloses the external system is for satellite TV instead of CATV (col. 5, lines 15-20; col. 17, lines 22-23). However, Carhart does not specifically disclose the upstream and downstream components are cards.

Ollikainen discloses a satellite transceiver (GEO transceiver or LEO satellite transceiver) comprises transmitter card (GEO 21a or LEO transmitter in 27) that reside in a box (cyberstation 20) external to computer 35 and that transmits radio frequency signals responsive to data received from the personal computer 35; a receiver card (GEO receiver 21 or LEO receiver in LEO satellite transceiver) that resides in the box

(cyberstation 20) external to a personal computer 35 and receives RF signal and converts the received signal for transfer to the personal computer (Figure, col. 1, lines 57-65; col. 3, lines 24-65; col. 4, lines 47-50). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carhart to use the teaching using the cards as taught by Ollikainen in order to allow the device to be upgraded, transferred, or removed easily.

Regarding claim 20, Carhart further discloses the frequency generated by the frequency synthesizer is set by conveying instructions via the USB port (instructions provided from the computing unit 21 via USP port connected to USB extension – see discussed in claim 19 above and col. 11, lines 1-32; col. 13, lines 32-43; figures 7-9).

Regarding claim 21, Ollikainen further discloses the transceiver is coupled to an external antenna system (13,14,15 – figure col. 2, lines 58-67). Ollikainen further discloses unlike PC-based satellite receiver cards that must be mated with, draw power from, the cyberstation 20 may be set up in a convenient location and left continuously powered up and connected to its antenna 13, 14 (col. 4, line 63-col. 15, 15, line 5). It is obvious that the transceiver (cyberstation) comprises a connector, through which a DC source, internal to the box, powers the antenna system in order to reduce power lost on transmission line and reduce the risks.

Regarding claim 22, Carhart discloses modulator 702 for modulating the signal to a frequency band (i.e. f_2 or below f1- col. 9, lines 59-60; col. 12, lines 44-56, figure 7) for transmission upstream. Carhart further discloses the signal path will be connected to a satellite signal receiver (col. 5, lines 15-20). Necessarily, the transmitter includes radio frequency modulation (modulation 702) that is coupled to convey the radio frequency signals to the antenna system via the connector. Alternatively, Ollikainen also discloses the transmitter card (21a or transceiver 27 (modem) – col. 3, lines 50-65) includes radio frequency modulation circuitry that is coupled to convey the radio frequency signals (deliver feed back, billing data, information requests, perform status, diagnostic reporting, etc.) to the antenna system via the connector.

Regarding claim 23, Carhart further discloses the transmitter includes radio frequency modulation circuitry (i.e. modulation 702 – figure 7) and the modulation circuitry modulates the transmitted signals according to a predetermined protocol (i.e. NTSC, PAL, ATV, etc.) in accordance with a command conveyed to the card via the USB port (instructions conveyed from computing unit via USB) – col. 11, lines 1-32; col. 12, lines 24-56; col. 13, lines 32-44).

13. Claims 15-16, 18, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carhart (6,622,304), in view of Ollikainen et al. (US 6,377,981), and further in view of Seta (US 5,301,194).

Regarding claim 15, Carhart discloses a transceiver card (external interface card 26 – col. 10, line 66-col. 11, line 8; col. 12, lines 13-18) for a personal computer (computing apparatus 21), the personal computer having a USB port (USB extension is used for communication path between the external interface device 26 and the computing apparatus 21 – col. 11, lines 1-8), the transceiver comprising:

a transmitter that resides in a box external to the computer and that transmits radio frequency signals responsive to data received from the personal computer via the USB port (component 50 or transmitter, which correspond to components 72, 701,702 in figure 7, that resides in external peripheral card 26, for transmitting upstream signal to external network responsive to data received from computing apparatus 21 via the USB port connected between computing apparatus 21 and external peripheral card 26 – figures 5-8; col. 9, lines 59-67; col. 11, lines 1-9; col. 12, line 14-56);

a receiver that resides in the external box and that receives radio frequency signals and converts the received signals to data for transfer to the personal computer via the USB port (component 58 or 52, which correspond to components 75-79, 703,704 in figure 7, that resides in external peripheral card (26) and that receives radio frequency signal (f1, f2) and converts the signals to data for transfer to the computing apparatus 21 via USB port connect to external card 26 – figures 5-8; col. 12, line 57-col. 13, line 44; col. 11, lines 1-9). Inherently, the transmitter and receiver includes respective interfaces so that the transmitter and the receiver can be interfaced with Universal Serial Bus to transmit and receive data from the computing apparatus 21. Carhart further discloses an auxiliary bus directly connecting the transmitter

(72,701,702) and the receiver (75-79,706- figure 7). Carhart also discloses the external system is for satellite TV instead of CATV (col. 5, lines 15-20; col. 17, lines 22-23). However, Carhart does not specifically disclose the upstream and downstream components are cards and synchronizing signal is conveyed from the receiver and the transmitter via the auxiliary bus.

Ollikainen discloses a satellite transceiver (GEO transceiver or LEO satellite transceiver) comprises transmitter card (GEO 21a or LEO transmitter in 27) that reside in a box (cyberstation 20) external to computer 35 and that transmits radio frequency signals responsive to data received from the personal computer 35; a receiver card (GEO receiver 21 or LEO receiver in LEO satellite transceiver) that resides in the box (cyberstation 20) external to a personal computer 35 and receives RF signal and converts the received signal for transfer to the personal computer (Figure, col. 1, lines 57-65; col. 3, lines 24-65; col. 4, lines 47-50). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carhart to use the teaching using the cards as taught by Ollikainen in order to allow the device to be upgraded, transferred, or removed easily. However, neither Carhart nor Ollikainen specifically discloses synchronizing signal is conveyed from the receiver and the transmitter via the auxiliary bus.

Seta discloses synchronizing signal is conveyed from the receiver (25,26) and the transmitter (22-23) via the auxiliary bus (receiver receives synchronizing signal, slot signal, etc. from the central office, processes and transmits the synchronizing signal,

slot signal to the transmitter to control the transmitter to transmit the signal according to the synchronizing signal, slot number –figures 2-4; col. 6, line 57-col. 8, line 37; col. 9, lines 30-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carhart and Ollikainen to use the teaching as taught by Seta in order to reduce packet collision thereby improve transmission efficiency (col. 2, lines 55-64).

Regarding claim 16, since an auxiliary bus connects the transmitter and the receiver as discussed in the rejection of claim 15 above, the transmitter and the receiver inherently has respective connectors so that the transmitter and the receiver can be connected to each other.

Regarding claim 18, Carhart further discloses the processor 701 then processes the video signal, which subsequently gets modulated to a frequency band f_2 by a modulator 702. The processor 701 may include precompensation of the video signal to account for an uneven passband (col. 12, lines 44-56, figure 7). It is obvious that the transmitter includes a frequency synthesizer for generating the radio frequency signal (i.e. in frequency band f_2) to improve efficiency in data transmission.

Regarding claim 24, Carhart further discloses the transmitter includes radio frequency modulation circuitry (i.e. modulation 702 – figure 7) and the modulation circuitry modulates the transmitted signals according to a predetermined protocol (i.e. NTSC,

PAL, ATV, etc.) in accordance with a command conveyed to the card via the USB port (instructions conveyed from computing unit via USB) – col. 11, lines 1-32; col. 12, lines 24-56; col. 13, lines 32-44). However, Carhart does not specifically disclose the modulation circuitry includes an encoder that encodes error correction into the transmitted signals. Official Notice is taken that using encoder that encodes error correction into the transmitted signals is well known in the art. For example, encode error correction in the transmitted signal so the error correction signal can be used to correct the signal at the receiving side. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carhart, Ollikainen and Seta in order to improve efficiency in data transmission.

14. Claims 26 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carhart (6,622,304), in view of Ollikainen et al. (US 6,377,981), and further in view of Fleming (US 6,073,188) and Seta (US 5,301,194).

Regarding claim 26, the limitations of the method as claimed correspond to the limitations of the transceiver as claimed in claim 13, and are analyzed as discussed in the rejection of claim 13. However, neither Carhart nor Ollikainen nor Fleming specifically discloses the additional limitation of conveying a synchronizing signal from the receiver to the transmitter via the auxiliary bus.

Seta discloses synchronizing signal is conveyed from the receiver (25,26) and the transmitter (22-23) via the auxiliary bus (receiver receives synchronizing signal, slot signal, etc. from the central office, processes and transmits the synchronizing signal, slot signal to the transmitter to control the transmitter to transmit the signal according to the synchronizing signal, slot number –figures 2-4; col. 6, line 57-col. 8, line 37; col. 9, lines 30-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carhart and Ollikainen and Fleming to use the teaching as taught by Seta in order to reduce packet collision thereby improve transmission efficiency (col. 2, lines 55-64).

Regarding claim 31, the additional limitation as claimed correspond to the additional limitation of claim 24, and are analyzed as discussed with respect to the rejection of claim 24.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Schwartz (US 4,494,211) discloses balanced system for ranging and synchronization between satellite pairs.

Abe et al. (US 6,463,049) discloses TDMA radio terminal capable of adjusting transmit timing by using measured delay time.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son P. Huynh whose telephone number is 571-272-7295. The examiner can normally be reached on 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher C. Grant can be reached on 571-272-7294. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SPH
November 10, 2005

CHRISTOPHER GRANT
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600